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CHROMOSOME-SPECIFIC STAINING TO DETECT GENETIC REARRANGEMENTS

ABSTRACT OF THE DISCLOSURE

Methods and compositions for staining based upon nucleic acid sequence that employ nucleic acid probes are provided. Said methods produce staining patterns that can be tailored for specific cytogenetic analyses. Said probes are appropriate for in situ hybridization and stain both interphase and metaphase chromosomal material with reliable signals. The nucleic acid probes are typically of a complexity greater than 50 kb, the complexity depending upon the cytogenetic application. Methods and reagents are provided for the detection of genetic rearrangements. Probes and test kits are provided for use in detecting genetic rearrangements, particularly for use in tumor cytogenetics, in the detection of disease related loci, specifically cancer, such as chronic myelogenous leukemia (CML), retinoblastoma, ovarian and uterine cancers, and for biological dosimetry. Methods and reagents are described for cytogenetic research, for the differentiation of cytogenetically similar but genetically different diseases, and for many prognostic and diagnostic applications.